

**AN ULTRA-WIDE BAND SOIL/TIRE INTERACTION RADAR**

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**ABSTRACT OF THE DISCLOSURE**

A radar system for vehicle tire testing and analysis may be  
120 mounted within the casing of a vehicle tire to measure the location of the inner casing of the tire (tire deformation) as well as the location of the tire/soil interface (tire footprint).

The radar system of the present invention may also be used to determine soil characteristics by analyzing the reflected signals.

125 The present invention may have particular use in testing tires for use with on- or off-road surfaces. However, the present invention may also be used to monitor tire deformation, traction, footprint, and soil characteristics.